Introduction

The Public Employee Retirement Administration Commission (PERAC) has completed our third Experience Study of the Massachusetts Teachers' Retirement System (TRS). This report presents the results of our experience analysis for members of the TRS over the six-year period from January 1, 2006 through December 31, 2011 and is based on annual data provided to us by TRS each year. In addition, for some of our analysis, we used data as of December 31, 2012.

The nature of an experience study is to track annual salary increases and how members leave a system (retirement, death, disability, or withdrawal) and, if warranted, to adjust the actuarial assumptions based on both this past experience as well as anticipated future experience. This task requires a more thorough review of the data provided to us for each annual actuarial valuation.

Please note that PERAC recommended reducing the investment return assumption from 8.25% to 8.0% effective with the January 1, 2013 actuarial valuation. The investment return assumption is not part of this experience analysis. However, in determining the effect of the revised assumptions, we used the 8.0% investment return assumption.

Each year as part of the valuation, we test how well the assumptions are working by performing a gain/loss analysis. If plan liabilities increase more than expected, there is an actuarial loss. Conversely, if plan liabilities increase less than expected, there is an actuarial gain. If each year the results consistently produced an actuarial loss (or an actuarial gain), then this would indicate that the assumptions are not properly reflecting actual experience. In this way, the gain/loss analysis serves as a proxy to the performance of a detailed experience study.

We reviewed the gains and losses on plan liabilities (excluding asset gains and losses) from 2006 through 2011. PERAC performed TRS valuations for each year in this period. Our review of the gains and losses over this period shows that, overall, the actuarial assumptions were generally reasonable. There were actuarial losses (experience worse than anticipated) in each year from 2006 to 2008, ranging from $150 million to $250 million. There were actuarial gains (experience better than anticipated) in each year from 2009 to 2011, ranging from $160 million to $325 million. Over the entire 6-year period, the assumptions generated a net cumulative gain of $43 million, or an average gain of $7.2 million per year. This amount is quite small considering the total actuarial accrued liability of approximately $36.5 billion as of January 1, 2012 (average gain of less than 1/10 of 1% of actuarial liability each year). Despite the relatively small overall gain over the period, we determined that some individual assumptions need to change more significantly.

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The annual funding schedule appropriation (the total plan cost) reflects two sources of plan costs and liabilities. The first is the amortization of the unfunded actuarial liability (UAL). The actuarial accrued liability less plan assets equals the UAL. The UAL was amortized through FY40 under the prior Commonwealth funding schedule. In January, 2014, the schedule was revised with total appropriation payments that increase 10.0% in FY15, FY16, and FY17, and 7.0% each year thereafter. Based on the January 1, 2013 actuarial valuation results, the amortization of the UAL is completed in FY36. In addition to the amortization of the UAL, the annual appropriation also reflects the normal cost (or current cost), which represents the value of benefits accruing during the coming year. The measure of the impact on the total plan cost of any change in assumptions is the impact of that change on these two components.

Although the normal cost and actuarial liability directly determine the appropriation under the funding schedule, these items are components that make up a portion of the present value of future benefits (PVFB). The PVFB may be the most accurate measure of the "true" total cost of a plan since it represents the present value of total projected benefits for all active, inactive and retired members. Any change in the actuarial assumptions will change the PVFB and, accordingly, the normal cost and actuarial liability.

Overall, our revised assumptions increase the total plan cost, primarily due to the change in the mortality assumption which reflects expected future mortality improvement. The revised assumptions were first reflected in our January 1, 2013 actuarial valuation.

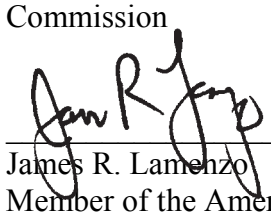
Our study focused on the demographic assumptions that have the greatest impact on plan costs (salary increases, retirement, disability, withdrawal, and mortality). There are a number of other demographic assumptions (including the percentage of disabilities that are job related and the percentage of active members that are married) which appear reasonable but were not reviewed in detail as part of this study. In addition, we used the same assumptions for the group of members hired after April 1, 2012 (and subject to a different benefit structure under Chapter 176 of the Acts of 2011) as for members hired prior to April 1, 2012. Since these members are a number of years from retirement and we have no basis to determine a different assumption set, we believe this is a reasonable approach at this time.

It is important to note that the results for the TRS reflect only one component of the Total Commonwealth Obligation. The other components are the State Retirement System, Boston teachers, and reimbursements to local systems to reflect COLAs granted from 1982 through 1996. The most recent experience study of the State Retirement System was released in February, 2014.

Introduction (continued)

We gratefully acknowledge the efforts of the Massachusetts Teachers' Retirement Board staff in completing this project.

Respectfully submitted,
Public Employee Retirement Administration
Commission



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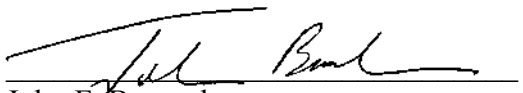

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